

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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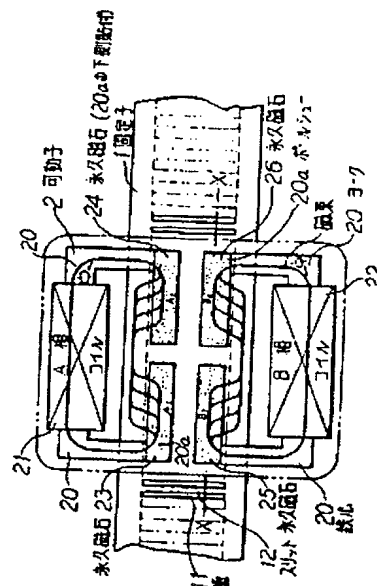
APPLICATION DATE : 25-11-86  
APPLICATION NUMBER : 61280231

APPLICANT : YASKAWA ELECTRIC MFG CO LTD;

INVENTOR : NAGASAKA NAGAIKO;

INT.CL. : H02K 37/14 H02K 41/03

TITLE : STEPPING MOTOR



ABSTRACT : PURPOSE: To improve pitch accuracy, by a method wherein one side of a step ping motor is constituted of electromagnets and permanent magnets and the other side of the same is formed with an inductor teeth, in which magnetic bodies are arranged with an equal pitch.

CONSTITUTION: A linear flat type stepping motor is equipped with a stator 1 and a movable piece 2 while the stator 1 is provided with teeth 11. The movable piece 2 is constituted of a core 20, phase-A and phase-B armature coils 21, 22 and permanent magnets 23-26. Flux is exerted synthetically by electromagnets, equipped with coils 21, 22, and permanent magnets 23-26. Further, phase-A and phase-B are formed by deviating them by the quarter of one pitch of the teeth 11 of the stator 1. According to this method, the motor, high in pitch accuracy, may be obtained with the reduced quantity of permanent magnets.

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